The goal of this project is to build a Sales Analytics System that retrieves, analyzes, and reports sales data for a retail store. I uses SQL to efficiently query data from a relational database, offering key insights

Q.1 Write a SQL Query to retrieve all columns for sales made on '2022-11-05'.

```sql
select * from retail_sales
    where
    sale_date = '2022-11-05';
```

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	transactions_id [PK] integer	sale_date date	sale_time time without time zone	customer_id integer	gender character varying (10)	age integer	category character varying (15)	quantity integer	price_per_unit double precision	cogs double precision	total_sale double precision
1	180	2022-11-05	10:47:00	117	Male	41	Clothing	3	300	129	900
2	240	2022-11-05	11:49:00	95	Female	23	Beauty	1	300	123	300
3	1256	2022-11-05	09:58:00	29	Male	23	Clothing	2	500	190	1000
4	1587	2022-11-05	20:06:00	140	Female	40	Beauty	4	300	105	1200
5	1819	2022-11-05	20:44:00	83	Female	35	Beauty	2	50	13.5	100
6	943	2022-11-05	19:29:00	90	Female	57	Clothing	4	300	318	1200
7	1896	2022-11-05	20:19:00	87	Female	30	Electronics	2	25	30.75	50
8	1137	2022-11-05	22:34:00	104	Male	46	Beauty	2	500	145	1000
9	856	2022-11-05	17:43:00	102	Male	54	Electronics	4	30	9.3	120
10	214	2022-11-05	16:31:00	53	Male	20	Beauty	2	30	8.1	60
11	1265	2022-11-05	14:35:00	86	Male	55	Clothing	3	300	111	900

Q.2 Write a SQL Query to retrieve all transactions where the category is 'clothing' and the quantity is more than equal to 3 in the month of 'Nov-2021'.

```sql
select * from retail_sales
where
    category = 'clothing'
    and
    to_char(sale_date, 'YYYY-MM') = '2021-11'
    and
    quantity >= 3;
```

Q.3 Write a SQL Query to calculate the total sales for each category.

```sql
select category, count(total_sale) as net_sales
from retail_sales
group by category;
```

	category character varying (15)	net_sales bigint
1	Electronics	678
2	Clothing	698
3	Beauty	611

Q.4 Write a SQL Query to find the average age of customers who purchased items from the 'Beauty' category.

```sql
select round(avg(age),2) as avg_age
from retail_sales
    where category = 'Beauty';
```

	avg_age numeric
1	40.42

Q.5 Write a SQL Query to find all transactions where the total_sale is greater than 1000.

```sql
select * from retail_sales
where total_sale > 1000;
```

Q.6 Write a SQL Query to find the total number of transactions (transactions_id) made by each gender in each category.

```sql
select
category,
gender,
count(transactions_id) as total_transaction
from retail_sales
group by gender,category
order by category;
```

	category character varying (15)	gender character varying (10)	total_transaction bigint
1	Beauty	Female	330
2	Beauty	Male	281
3	Clothing	Female	347
4	Clothing	Male	351
5	Electronics	Male	343
6	Electronics	Female	335

Q.7 Write a SQL Query to calculate the average sale for each month. Find out the best selling month in each year.

```sql
select year, month, avg_sales
from
(select
      Extract(year from sale_date) as year,
      Extract(month from sale_date) as month,
      avg(total_sale) as avg_sales,
      rank() over (partition by Extract(year from sale_date) order by avg(total_sale) desc) as rank
from retail_sales
group by 1,2) as t1
where rank = 1;
```

	year numeric	month numeric	avg_sales double precision
1	2022	7	541.3414634146342
2	2023	2	535.531914893617

Q.8 Write a SQL Query to find the top 5 customers based on the highest total sales.

```sql
select
      customer_id,
      sum(total_sale) as total_sales
from
    retail_sales
group by 1
order by 2 desc
limit 5;
```

	customer_id integer	total_sales double precision
1	3	38440
2	1	30750
3	5	30405
4	2	25295
5	4	23580

Q.9 Write a SQL Query to find the number of unique customers who purchased items from each category.

```sql
select
      category,
      count(distinct customer_id) as unique_customer
from
    retail_sales
group by category;
```

	category character varying (15)	unique_customer bigint
1	Beauty	141
2	Clothing	149
3	Electronics	144

Q.10 Write a SQL Query to create each shift and number of orders (Example Morning < 12, Afternoon between 12 & 17, Evening > 17)

```sql
with hourly_sales
as
(
select *,
    case
        when Extract(hour from sale_time) < 12 then 'Morning'
        when Extract(hour from sale_time) between 12 and 17 then 'Afternoon'
        else 'Evening'
    end as shift
from retail_sales
)
select
shift,
count(*) as total_orders
from hourly_sales
group by shift;
```

	shift text	total_orders bigint
1	Afternoon	377
2	Evening	1062
3	Morning	548

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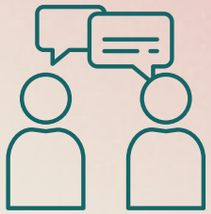

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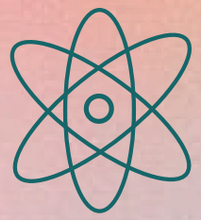

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